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SPEC BUY

Current Price	$0.89
Valuation	$2.02

Monday, 19 June 2023

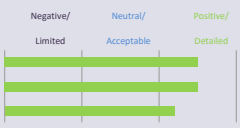
Centaurus Metals (CTM)

Offtake Rights Released

Analyst | George Ross

Code:	**CTM**
Sector:	**Materials**

ESG Ratings:



* All figures in AUD unless stated otherwise

Shares on Issue (M):	**427**
- fully diluted (M)	**439**
Market Cap ($M):	**380**
- fully diluted ($M)	**391**
Net cash ($M) [Mar 23]:	**23**
Enterprise value ($M):	518
EV/Resource Ni Tonnes	A$708/t
52 wk High/Low (ps):	**$0.69** **$1.22**
12m av. daily vol. (Mshs):	**0.7**

Key Metrics:

	FY27e	FY28e	FY29e
P/E (x)	0.0	5.4	4.4
EV/EBITDA (x)	14.1	10.0	7.4

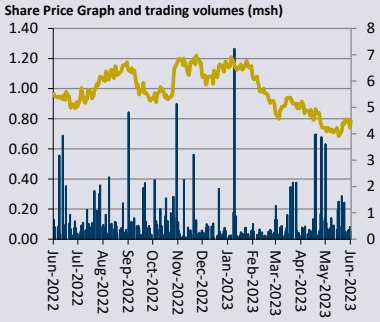
Financials:

	FY27e	FY28e	FY29e
Revenue ($M)	86	483	563
EBIT ($M)	22	217	257
NPAT (A$M)	0	167	204
Net assets ($M)	202	247	352
Op CF ($M)	3	175	200

Per share data:

EPS (c)	-0.0	16.6	20.3
Dividend (cps)	0.0	0.0	0.0
Yield (%)	-	-	-
CF/Share (cps)	0.8	41.0	46.9
Prod (kt Ni)	3,222	18,049	21,060

Share Price Graph and trading volumes (msh)



Please refer to ESG comments from page 9 and important disclosures from page 11

Quick Read

This morning Centaurus Metals (CTM) reported it had acquired 100% of all Jaguar nickel product offtake rights from Vale in exchange for an increased project metal royalty. The release of offtake opens up a galaxy of potential financing solutions and suitors including EV manufacturers who crave sources of dependable low-carbon emission battery metals. The move could also trigger M&A activity from existing miners, attracted to Jaguar's scale and generous payable margin.

Offtake Returned

Offtake History: When Vale sold Jaguar to CTM in 2019, it retained 100% of nickel offtake. The absence of tradeable offtake was viewed as a barrier to completing funding alternatives. With offtake now released, all funding options are back on the table.

Offtake Released: In today's announcement CTM outlines the release of Vale's 100% offtake rights in exchange for an increase to product royalties. Vale had retained a 0.75% gross Net Operating royalty on the sale of Jaguar nickel sulphide concentrate and in 2022 agreed to a 0.55% rate for nickel sulphate production.

In exchange for release of the offtake CTM's product royalty rates have increased to 1.75% for nickel sulphate and 2.00% for nickel in concentrate. The company remains focused on developing the project as a nickel sulphate producer, making the 1.75% rate the most likely rate applicable.

Funding Implications: This is the deal CTM shareholders have been waiting for. The release of Vale's offtake opens the door to involvement by downstream EV and battery manufacturers in a Jaguar funding solution. Jaguar's low carbon emission nickel production is likely to be highly sought after by ESG focussed downstream users. Security of dependable, ESG friendly metal supply has driven a rise in equity, prepayment and debt support from EV manufacturers like General Motors, Stellantis, Ford and Volkswagen to miners.

M&A: Jaguar's >930kt nickel metal (in sulphide) MRE inventory would be highly prized by any base metal miner. In our previous Cat Amongst the Pigeons and Brazilian Comparisons, we highlighted the comparative value of Jaguar's ore and potentially mineable inventory versus Chalice Mining's Julimar, BHP's West Musgrave and ACG's Santa Rita projects. Using our comparative methodology, we identify that CTM is materially undervalued compared to peers.

Valuation: We have updated our CTM valuation model to include sulphate product royalties of 1.75%. Total royalties applied to the project are now 5.4%, our previous assumption was 4.6%. We have unwound our Study Maturity discount from 25% to 20% to reflect increased certainty of project model parameters. Our optimised present day NPV_9 is now estimated at A$1.23B and build date NPV_9 estimated at A$1.51B.

Recommendation

We maintain our Speculative Buy recommendation and improve our valuation to A$2.02 per share (previously $1.95).

Centaurus Metals (CTM)

Equities Research

Analyst: George Ross

Recommendation	**Speculative Buy**
Current Price	**$0.89**
Valuation	**$2.02**

Sector	**Metals & Mining**
Issued Capital (Mshs)	**427**
Market Cap (M)	**$ 380**

Monday, 19 June 2023

Profit & loss (A$M) 30 June	Unit	2026E	2027E	2028E	2029E
Sales Revenue	**A$M**	**0**	**86**	**483**	**563**
+ Other income/forwards	A$M	**0**	**0**	**0**	**0**
- Operating costs	A$M	-4	-29	-144	-172
- Royalties	A$M	0	-5	-27	-31
- Corporate & administration	A$M	-16	-16	-16	-16
Total Costs	**A$M**	**-20**	**-50**	**-187**	**-219**
EBITDA	**A$M**	**-20**	**37**	**296**	**344**
- margin		0%	43%	61%	61%
- D&A	A$M	0	-14	-78	-88
EBIT	**A$M**	**-20**	**22**	**217**	**257**
+ Finance Income/Expense	A$M	-9	-16	-11	-5
PBT	**A$M**	**-29**	**6**	**207**	**252**
- Tax expense	A$M	0	-7	-40	-47
- Impairments and other	A$M	0	0	0	0
NPAT	**A$M**	**-29**	**0**	**167**	**204**

Cash flow (A$M)	Unit	2026E	2027E	2028E	2029E
+ Revenue	A$M	0	86	483	563
- Cash costs	A$M	-22	-65	-264	-311
-Tax payments		0	-2	-32	-47
+ Interest & other	A$M	-9	-16	-11	-5
Operating activities	**A$M**	**-31**	**3**	**175**	**200**
- Property, plant, mine devel.	A$M	-488	-30	-6	-42
- Exploration	A$M	-2	-2	-2	-2
- Feasibility Studies		0	0	0	0
Investment activities	**A$M**	**-490**	**-32**	**-8**	**-44**
+ Borrowings	A$M	257	-57	-114	-114
- Dividends	A$M	0	0	0	0
+ Equity	A$M	0	0	0	0
Financing activities	**A$M**	**257**	**-57**	**-114**	**-114**
Cash change	**A$M**	**-264**	**-86**	**53**	**42**

Balance sheet (A$M)	Unit	2026E	2027E	2028E	2029E
Cash	**A$M**	**98**	**12**	**66**	**108**
Other Current Assets	A$M	0	0	0	0
Total current assets	**A$M**	**98**	**12**	**66**	**108**
Property, plant & equip.	A$M	**488**	**504**	**432**	**386**
Investments/other	A$M	0	0	0	0
Total non-curr. assets	**A$M**	**488**	**504**	**432**	**386**
Total assets	**A$M**	**586**	**516**	**497**	**494**
Trade payables	A$M	64	11	39	42
Short term borrowings	A$M	57	114	114	57
Other	A$M	64	18	39	42
Total curr. liabilities	**A$M**	**185**	**143**	**193**	**141**
Long term borrowings	A$M	286	171	57	0
Other	A$M	0	0	0	0
Total non-curr. liabil.	**A$M**	**286**	**171**	**57**	**0**
Total liabilities	**A$M**	**471**	**315**	**250**	**141**
Net assets	**A$M**	**115**	**202**	**247**	**352**

Resource	Mt	Ni %	Ni Kt
Jaguar South (II)	34.6	0.92	317
Jaguar Central (II)	12.5	0.81	100
Jaguar North (II)	3.2	1.15	37
Jaguar Central North(II)	14.2	0.62	88
Jaguar North East (I)	16.8	0.75	126
Jaguar West (II)	8.7	0.72	63
Onca Preta (II)	14.2	1.23	174
Onca Rosa (I)	1.9	0.98	19
Tigre (II)	2.00	0.77	15
Total Global MRE	**108.1**	**0.87**	**939**

Financial ratios	2027E	2028E	2029E	2030E
GCFPS Diluted (A¢)	1	41	47	47
CFR (X)	109.3	2.2	1.9	1.9
EPS Diluted (A¢)	0	17	20	21
PER (X)	0.0	5.4	4.4	4.2
DPS ($)	0%	0%	0%	0%
Yield (%)	0%	0%	0%	0%
Interest cover (X)	1	20	51	729
ROCE (%)	6%	71%	73%	55%
ROE (%)	3%	84%	71%	55%
Avg Gearing (%)	170%	98%	34%	2%

Jaguar Operations summary	2027E	2028E	2029E	2030E
Ore processed (Mt)	0.4	2.3	2.7	2.7
Ni Head grade after ore sorting (%)	1.10	1.04	1.00	0.77
Met. Recovery (%)	78%	78%	78%	78%
Share of Ni in Final Product (t)	3222	18049	21060	21060
Cost per milled tonne (US$/t)	74	67	68	70
Cash costs pre royalty (US$/t)	8891	8595	8757	8935
C1 Costs (US$/lb)	4.3	3.9	4.0	3.9
AISC (US$/lb)	4.7	4.6	4.9	4.6

Price assumptions	2027E	2028E	2029E	2030E
AUDUSD	0.700	0.700	0.700	0.700
Nickel (US$/t)	17500	17500	17500	17500
Nickel (US$/lb)	7.94	7.94	7.94	7.94
Nickel (A$/t)	25000	25000	25000	25000

Company Valuation summary	A$M	A$/sh
Jaguar Project NPV9 AUD	1233	2.89
Risk Discount (Study Maturity 20%)	-247	-0.58
Jambreiro Project	40	0.09
Exploration, all sites	191	0.45
Corporate overheads	-158	-0.37
Cash & Equivalents	23	0.05
Debt	0	0.00
Option/equity dilution	-222	-0.52
Total	861	2.02

^ Future Option/Equity Dilution is calculated using an NPV formula that considers value of dilutionary shares/options in future periods against the current project valuation

Directors, management	
Didier Murcia	Chairman
Darren Gordon	Managing Director / CEO
Bruno Scarpelli	Executive Director
Mark Hancock	Non-Executive Director
Chris Banasik	Non-Executive Director
Natalia Streltsova	Non-Executive Director
Roger Fitzhardinge	GM - Exploration & Growth
Wayne Foote	GM - Operations
John Westdorp	Chief Financial Officer

Top shareholders	M shs	%
McCusker Holdings Pty Ltd	56	13
Sprott Inc.	39	9
Regal	27	6
Harmanis	22	5
Dundee Corporation	23	5
Management	17	4

Shares	2024E	2025E	2027E	2029E
New shs issued/exerciseable	64	186	0	0
Average issue price	0.8	1.3	0.0	0.0
Ordinary shares - end	623	995	995	995
Diluted shares - end	629	995	995	995

Comparative Peers

Figure 1: Summary table of CTM versus peer group. Refer to Cat Amongst the Pigeons note for further details.

Owner Name	Centaurus Metals	Chalice Mining		BHP Group	DeGrey Mining
ASX Company Code	CTM	CHN		BHP	DEG
Current Share Price (A$)	0.71	7.13		42.82	1.30
Development Stage	Scoping, DFS 2023	Advanced Exploration		Construction	Pre-Feasibility
Estimated Build Start /FID Date	CY2024	>CY2027		CY2023	CY2025
Dominant Payable Metals	Ni-Cu-Co-Zn	PGM-Ni-Cu-Co		Ni-Cu	Au
Resource Gross Metal Value (US$B)	19.0	49.4	33.1	38.2	12.8
Resource Recoverable Value (US$B)	14.0	29.3	21.3	25.7	11.9
Inventory Payable Value (US$B)	7.2	18.3	9.3	15.9	12.3
Inventory Margin Value (US$B)	4.0	7.4	3.0	7.8	6.8
Development Scenario	2.7Mtpa POX Sulph	20Mtpa POX MHP	5Mtpa HG POX Sulph	13.5Mtpa POX MHP	10Mtpa POX Doré
Modelled Operational Life	16	21	19	21	15
Unoptimized Build Date NPV(7) A$M	**1627**	**2494**	**1237**	**2088**	**2637**
Equiv Value Per Share (A$)	3.73	6.45	3.20	0.42	1.71
Unoptimized Present Day NPV(7) A$M	**1403**	**1737**	**841**	**2088**	**2126**
Equiv Value Per Share (A$)	3.22	4.49	2.18	0.42	1.38
Avg EBITDA (A$ M)	342	589	305	555	668
Avg Annual NPAT (A$ M) (First 10Y)	269	375	193	346	435
Owner EV/EBITDA Trading Multiple	**0.8 x**	**4.4 x**	**8.5 x**	**-**	**2.8 x**
Owner EV/NPAT Trading Multiple	**1.1 x**	**7 x**	**13.5 x**	**-**	**4.3 x**
CTM SP @ Peer EV/EBITDA Multiple (A$)	**0.71**	**2.96**	**5.67**	**-**	**1.88**
CTM SP @ Peer EV/NPAT Multiple (A$)	**0.71**	**4.62**	**8.92**	**-**	**2.86**

Source: Argonaut

Figure 2: Summary table of CTM versus peer group. Refer to Brazilian Comparisons note for context and a full explanation.

	Centaurus Metals	ACG Electric Metals				
Project	Jaguar	Santa Rita - OP	Santa Rita - UG	Serrote	Combined Assets	
Gross Value of Inventory US$B	10.3	2.6	17.6	2.4	**22.7**	
Recoverable Value of Inventory US$B	7.5	2.0	13.7	2.0	**17.7**	
Payable Value of Inventory US$B	7.7	1.4	9.7	1.8	**13.0**	
Development Scenario	2.7Mtpa POX Sulph	Current OP	SL Caving	Open Pit		
Development Status	Planned	Operating	Planned	Operating		
Ramp Up Period (Years)	2	NA	7	NA		
Mine Life (Years)	16	7	28	12		
Estimated Build Start /FID Date	2024	NA	2026	NA		
Current Closure Based on Reserves	2042	2028	2053	2034		
	Operation Economics (Australian Dollars)					
					SR OP + Serrote	SR UG + Serrote
Initial Capex (A$M)	607	0	596	0	0	596
Avg Revenues (A$M)	628	379	675	245	623	920
Avg Annual AISC (A$M)	385	232	323	148	380	471
Avg EBITDA (A$ M)	342	151	345	117	269	463
Avg Annual NPAT (A$M) - Early Discount Period	269	129	281	100	228	381
Discounted to Year	(to 2036)	(to 2030)	(to 2030)	(to 2033)		
Avg Annual NPAT (A$M) - After Discount Expiry	209	106	231	77	183	309
Unoptimized Present Day NPV(7) A$M	**1403**	**562**	**878**	**769**	**2210**	

Source: Argonaut

Table 1: Base case metal price assumptions used for comparisons.

Metal	Base
Ni US$/t	17500
Cu US$/t	8000
Co US$/t	40000
Zn US$/t	2500
3E PGM US$/oz	1698
Au US$/oz	1800
Pt US$/oz	1200
Pd US$/oz	1800

Centaurus Valuation

Our model includes the extraction of 60Mt of ore grading 0.80% Ni plus by-products from an open pit only operation. Our pit model assumes a post-strip ore to waste strip ratio of 1:8.8

We model a 24-month development period starting construction in Q1 CY2025 with commissioning beginning late 2026 and commercial production ramp up from Q1 2027.

Table 2: CTM company level net asset valuation.

Company Valuation summary	A$M	A$/sh
Jaguar Project NPV9 AUD	1233	2.89
Risk Discount (Study Maturity 20%)	-247	-0.58
Jambreiro Project	40	0.09
Exploration, all sites	191	0.45
Corporate overheads	-158	-0.37
Cash & Equivalents	23	0.05
Debt	0	0.00
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Total	861	2.02

^ Future Option/Equity Dilution is calculated using an NPV formula that considers value of dilutionary shares/options in future periods against the current project valuation

Source: Argonaut

We assume US$440M in initial capital expenditure including pre-strip. We have increased our underlying operation cost variables to accommodate inflation. Our model generates an average life-of-mine AISC of US$5.2/lb of payable nickel throughout life of mine. We maintain our 107% metal payability for a nickel sulphate product. We use a static long term nickel price of $17,500/t.

We assume project funding will be provided through a ~60:40 debt:equity mix. Future Option/Equity Dilution is calculated using an NPV formula that considers value of dilutionary shares/options in future periods against the current project valuation. We assign a A$40M value to the Jambreiro Iron Ore Project.

We estimate an optimised present day NPV9 of A$1,233M for the Jaguar Project, equivalent to $2.89 per share. We apply a Study maturity risk discount of 20% equivalent to -A$0.58 per share. This risk discount will be unwound with the advancement of studies.

Recommendation & Valuation

We maintain our Speculative Buy and improve our valuation to A$2.02 per share. Release of nickel offtake opens the door to various funding solutions and makes CTM a potential target of M&A.

Appendix: Calculation of Value Classes

In this section we detail our methodology for estimation of Gross, Equivalent, Recoverable, Payable (Payable) and Margin comparative values.

Gross Value

Gross Value represents the raw value of metals in either a deposit or per tonne of rock. Gross Value per tonne of ore (or deposit) is calculated by aggregating the multiples of elemental grade and their relevant metal sale value (example shown in Table 3). Comparison by gross value of different ore deposits is flawed due to the fact that it fails to take into account recoveries, payabilities and cost of production.

Table 3: Example calculation of Gross IGV per tonne of ore.

Metal	Ni	Cu	Co
Metal Price Assumed	$17,500/t	$8,000/t	$40,000/t
Deposit Raw Metal Grade	0.18% Ni	0.10% Cu	0.02% Co
Gross Value of metal /t of Ore	$32/t	$8/t	$8/t
	(0.18% x 17,500)	(0.10% x 8,000)	(0.02% x 40,000)
Gross Value /t Ore	$46/t Ore		

Source: Argonaut

Equivalent Value

Metal Equivalent Grades (and tonnes) are frequently quoted as part of resource company drilling or resource announcements. However, the derivation and meaning of these values is poorly understood by the general investment community. A common market misconception is that metal equivalent grades of the same type (eg. NiEq or CuEq) can be reliably compared across deposits. A core feature of a Metal Equivalent Grades is that it represents the aggregate value of metals as a primary element including its relevant metal recovery.

When component values are aggregated to a single metal equivalent value with a low metallurgical recovery, the resulting grade can appear inflated because few readers instinctively consider recovery factors. An example of this is our derivation of $46/t ore Gross Value calculated from individual metals in Table 3 versus our Nickel Equivalent Value of $53/t ore calculated in our Table 4 example.

In an ideal world, we would prefer that regulators enforced statement of recovery whenever Equivalent Values were used. For example, the Nickel equivalent grade of 0.305% NiEq presented in Table 4 would be stated as “0.305% NiEq / 45% Recovery”.

The below example outlines the most common method to calculate metal equivalent values for resources and drill holes from a suite of multi-element assays. In this example, we calculate the nickel equivalent value for a deposit containing nickel, copper and cobalt at various grades and recoveries.

Equivalent Metal Calculation Method:

A. Assign metal price assumptions and calculate value conversion factors for the chosen metal (in this case nickel).

B. Calculate the recoverable grade of each metal by multiplying the raw value by recovery.

C. Calculate the recoverable nickel value of each metal by multiplying the recoverable grade by the conversion factor calculated in step A.

D. Reinflate the recoverable nickel grades to ‘raw’ nickel equivalent deposit grade by dividing by the nickel recovery (45%)

E. Sum these values to attain a ‘Nickel Equivalent’ value for the deposit

Table 4: Method for calculation of nickel equivalent values for a Ni-Cu-Co deposit.

	Metal	Ni	Cu	Co
A	Metal Price Assumed	$17,500/t	$8,000/t	$40,000/t
	Value Conversion Factor for Nickel	1	0.46	2.29
		(17500/17500)	(8000/17500)	(40000/17500)
Deposit Raw Metal Grade		0.18% Ni	0.10% Cu	0.02% Co
Deposit Metal Recovery		45%	85%	45%
B	Recoverable Grade of Metal	0.081%	0.085%	0.008%
		(0.18%*45%)	(0.1%*85%)	(0.02%*45%)
C	Recoverable Nickel Equivalent Value	0.081	0.039	0.017
		(0.081*1)	(0.085*0.46)	(0.008*2.29)
D	Inflate to Equivalent Ni Grade of Ore	0.18	0.086	0.039
		(0.081/45%)	(0.039/45%)	(0.008/45%)
E	Deposit Nickel Equivalent Grade	0.305% NiEq		
		(0.18+0.086+0.039)		

Source: Argonaut

Recoverable Value

We define recoverable value as the total value of metals recoverable from a tonne of ore (or deposit). In our view this is a superior measure compared with Gross or Equivalent Value as it accounts for losses from mineral processing recoveries. Recoverable value is calculated by multiplying the Gross Value components (or Equivalent Value) by their respective recoveries. Table 5 and Table 6 provide examples of Recoverable Value calculations from raw and equivalent grades respectively (note they are equal).

Table 5: Calculation of Recoverable value /t Ore from individual metals grades.

Metal	Ni	Cu	Co
Metal Price Assumed	$17,500/t	$8,000/t	$40,000/t
Value Conversion Factor for Nickel	1	0.46	2.29
	(17500/17500)	(8000/17500)	(40000/17500)
Deposit Raw Metal Grade	0.18% Ni	0.10% Cu	0.02% Co
Deposit Metal Recovery	45%	85%	45%
Recoverable Grade of metal /t of Ore	0.081%	0.085%	0.008%
	(0.18% x 17,500)	(0.10% x 8,000)	(0.02% x 40,000)
Recoverable Value /t of Ore	$14/t	$7/t	$3/t
	(0.081% x 17,500)	(0.085%x 8,000)	(0.008% x 40,000)
Recoverable Value /t Ore	$24/t Ore		

Source: Argonaut

Table 6: Calculation of Recoverable Value /t Ore from Nickel Equivalent grade.

Metal	Ni Equivalent
Metal Price Assumption	$17,500/t
Nickel Equivalent Grade	0.305% NiEq
Equivalent Value /t Ore	$53/t Ore
	(0.31% x 17500)
Nickel Recovery	45%
Recoverable Value /t Ore	$24/t Ore
	(53 x 45%)

Source: Argonaut

Payable Value

Determination of 'Payable', provides us with a guide for how much revenue will be generated per unit of ore after refinement. Our Payable value calculation includes corrections for metal 'payabilities'. The term payablility refers to the percentage of value returned to the miner from the refiner of the product. The percentage of payability varies depending on the metal and product type. For example, gold miners who produce almost pure doré bars will be paid close to 100% payability for their product. The applicable payable percentage for metals reflects the associated refinement expense, yield, technical complexity and the impact of deleterious elements.

The nickel producers are subject to a wide variety of metal payabilities depending on product produced. A traditional nickel miner selling at 16% Ni sulphide concentrate to a pyrometallurgy refiner may only be paid 70% of contained nickel, 40% for copper and nothing for platinum group elements. However, if the same miner sells to a hydrometallurgical refiner they could expect higher profitable recoveries for all metals. If the miner was to invest in its own hydrometallurgical refinement equipment then it would gain direct exposure to value upside. If a nickel miner produces a purified Nickel Sulphate or pCAM product they can potentially early greater that 100% metal payability.

Table 7: Example payability ranges for various nickel products.

Product Produced	Nickel Payability Range
Sulphide Concentrate	70-75%
Mixed Hydroxide Precipitate (MHP)	82-86%
Battery Grade Sulphate (NiSO4)	102-107%
Battery Grade precursor cathode (pCAM)	120-140%

Source: Argonaut industry knowledge

Payable Value is calculated by recoverable metal value by percentage of metal payability for the applicable product.

Table 8: Calculation of Payable Value /t Ore from Nickel Equivalent grade.

Metal	Ni Equivalent
Metal Price Assumption	$17,500/t
Nickel Equivalent Grade	0.305% NiEq
Equivalent Value /t Ore	$53/t Ore
	(0.31% x 17500)
Nickel Recovery	45%
Recoverable Value /t Ore	$24/t Ore
	(53 x 45%)
Payable Percentage	85% (MHP Product)
Payable Value /t Ore	$20.4 /t Ore
	(24 x 85%)

Source: Argonaut

Margin Value

Finally, we calculate the Margin Value per tonne of ore by subtracting costs per unit of production from the payable cost. Each project will have its own cost profile associated with scale, mining method, processing requirements etc. Determination of the Marginal Value provides us with a simple profit per unit of production and enables some basic economic modelling.

Figure 3: Calculation of Margin Value

Metal	Ni Equivalent
Metal Price Assumption	$17,500/t
Nickel Equivalent Grade	0.305% NiEq
Equivalent Value /t Ore	$53/t Ore
	(0.31% x 17500)
Nickel Recovery	45%
Recoverable Value /t Ore	$24/t Ore
	(53 x 45%)
Payable Percentage	85% (MHP Product)
Payable Value /t Ore	$20.4 /t Ore
	(24 x 85%)
Costs /t Ore	$15/t Ore
Margin Value	$5.4 /t Ore
	(20.4 – 15)

Key Risks to valuation

Timelines

Our discounted cash flow model is time dependant. Any delay to scheduled development or production will adversely effect on our valuation.

Metallurgical performance

Provisional metallurgical testing has been completed upon a limited set of samples and is unlikely to accurately represent true future performance. Pilot POX test programmes have been completed with positive outcomes.

Fluro-apatite is associated with mineralisation at the Jaguar project. Sulphide concentrate characterisation studies have concluded that fluorine is present in quantities that may attract a penalty. Production of a sulphate product via POX will eliminate this penalty risk.

Commodity Pricing

Value estimates are based on consensus long term commodity price forecasts. A 10% difference to the price of nickel over the modelled life of mine will result in a ~25% shift in project valuation.

Costs

Cost assumptions are based on operating and capital costs from CTM documentation and our knowledge of industry rates.

Exploration success

Valuation assumes that future exploration and investments achieve acceptable returns. Subjective value is attributed to exploration assets at Jaguar.

Interest rates/discount rates

Argonaut takes cash flow risk into account when choosing discount rates for different projects. Our valuation is sensitive to the discount rate used.

ESG credentials and sustainability

In this section we collate information regarding CTM's Environmental, Social and Governance performance. Refer to the disclosures section for commentary on Argonaut's approach to ESG.

Table 9: Environmental, Social, and Governance comments

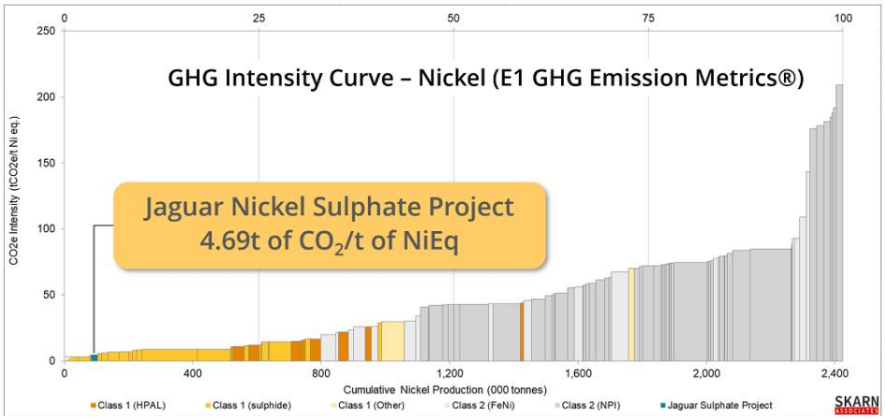
COMMITMENT / DELIVERY	Positive
• Our view on commitment and delivery needs to be considered in the light of the stage of operations • ESG issues are addressed in announcements and on the Company's website • CTM has displayed strong engagement with local communities and various levels of government • More than 90% of the current Jaguar project workforce are from the south-eastern region of the state of Para • More than 80% of Jaguar project expenditure related to exploration and development work has been award to local community and regional suppliers • CTM has constructed a plant nursery on site in partnership with local municipalities • The Company has implemented an internship program with the University of Maraba in the fields of geology, mining and engineering • CTM has improved access roads to the Jaguar site. These are also used by the local communities • CTM donated a 20,000L water tank to the nearby village of Minerasul • Survey data suggests that 95% of the local community interviewed support the Jaguar Project	

INDUSTRY	Positive
• Nickel is vital to the manufacture of NCM lithium-ion batteries. The demand for lithium-ion batteries is expected to grow with a global economic shift towards decarbonisation • The current development plan for CTM is to produce an intermediate nickel sulphate product via treatment through Pressure Oxidation • A greenhouse gas emission analysis of CTM's planned sulphate product is expected to be lower than 95% of global nickel production. This low production emission profile is driven by availability of hydroelectricity and the hydrometallurgical route of processing	

REPORTING	Acceptable
• CTM provides information about sustainability within various company announcements • A formal ESG Framework was implemented in late 2021. This framework is based on the Towards Sustainable Mining Principles and the United Nations-supported Principles of Responsible Investment • In May 2023 CTM published its first sustainability report.	

** Please refer to disclosures section for Argonaut's approach to sustainability*

Figure 4: Modelled greenhouse gas emissions for Jaguar versus global nickel production.



Source: CTM/Skarn Associates

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Important Disclosure
The publishing analyst owns CTM shares.

Argonaut holds or controls 161,638 CTM shares.

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ESG and Sustainability Commentary
Argonaut has introduced sustainability analysis for selected companies under coverage. Our intention is to highlight ESG-related attributes or risks, as it is believed these will increasingly impact investment attractiveness, cost of capital, and valuation. It is considered in the context of the size and life-cycle stage of the company. Where sustainability risk is high relative to company size/maturity, the analyst will consider adjusting the valuation and/or opinion to reflect this risk. A brief rationale behind the view and its impact on the analysis may be provided in the report.

The following table summarises how we have approached this issue. It is not all inclusive and we do not purport to provide a rating that is inclusive of all the factors that may be considered in a full ESG ratings report.

Measure	Selected Analysis factors	View
Commitment, operational delivery & risk mitigation	Largely subjective: • Visible efforts to embrace a more sustainable future • Nature of operations, jurisdiction and environmental impact • Comparison to peers in the same industry/sector • Efforts to mitigate identified risks • Engagement with stakeholders • Corporate governance considerations and good citizenship • Diversity, equality, and inclusion • Company actions supportive of aspirational targets • Energy usage and efforts to mitigate climate risks • Any reported ESG-related/corporate governance issues	Positive Neutral Negative
Industry/Sector sustainability	Largely subjective: • Commodity/product/service contribution to sustainable future • Industry/sector/business model resilience as pertains to ESG factors • Sector energy intensity and/or carbon emissions • Downstream/supply chain impact on sustainability	Positive Neutral Negative
Company ESG reporting	Largely objective (but in context of company size/maturity): • Sustainability/corporate governance report/audit • Availability of data to back up narrative (emissions, water usage etc.) • Reference to ESG-related framework (GRI, SASB, TCFD, UN SDGs, MSA) • Rating from a recognised global ESG ratings agency	Detailed Acceptable Limited

In the absence of uniform global reporting standards Argonaut's current approach and views are necessarily largely subjective. Argonaut will consider ways to formalise ratings as the ESG ratings industry and measurement criteria evolve, but in the meantime investors should do their own analysis and/or obtain independent ratings from ratings providers.

Note that in this context Argonaut uses sustainability and ESG interchangeably.

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